

Appl. No. 10/811,201  
Amdt. dated October 11, 2005  
Amendment under 37 CFR 1.116 Expedited Procedure  
Examining Group 3765

PATENT

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1-11. (Cancelled)

12. (Previously presented) A method for the insertion of a weft thread into a shed of an air jet weaving machine, wherein the weft thread is drawn off from a thread store, the drawn off weft thread being measured with the help of a measuring apparatus, wherein the weft thread is inserted into the shed by means of a plurality of air nozzles and a control system controlling the compressed air supply of the air nozzles in dependence on measurement values of the measuring apparatus,

wherein

switch on points are associated with the air nozzles;

wherein predictor values for the position of the weft thread tip are formed with the help of the measurement values;

wherein a safety value or factor is contained in the predictor values for the position of the weft thread tip;

and wherein the control system charges one or more of the air nozzles with compressed air as soon as a predictor value for the position of the weft thread tip, which is formed with the help of the measurement values, reaches the switch on point of the relevant air nozzle or air nozzles, respectively.

13. (Previously presented) A method in accordance with claim 12, wherein the time which is required for the insertion of the weft thread additionally is determined and compared with a predetermined desired insertion time, and wherein the difference between the time required for the insertion of the weft thread and the desired insertion time is used in

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order to regulate at least one of the pressure, the blowing time and the flow through the air nozzles.

14-18. (Cancelled)

19. (Previously presented) A system for inserting a weft thread into a shed of an air jet weaving machine, said system including a thread store, a measuring apparatus in order to be able to measure the weft thread which is drawn off from the thread store, a plurality of air nozzles for the insertion of the weft thread and a control system which is connected to the measuring apparatus in order to be able to control the compressed air supply of the air nozzles in dependence on measurement values of the measuring apparatus;

wherein switch on points are associated with the air nozzles;

wherein predictor values for the position of the weft thread tip are formed with the help of the measurement values;

wherein a safety value or factor is contained in the predictor values for the position of the weft thread tip; and

wherein the control system charges one or more of the air nozzles with compressed air as soon as a predictor value for the position of the weft thread tip, which is formed with the help of the measurement values, reaches the switch on point of the relevant air nozzle or air nozzles, respectively.

20. (New) A system in accordance with claim 19, wherein the air nozzles include at least one of at least one main nozzle and at least one tandem nozzle, and more than one relay nozzle, and wherein switch-on points are associated with the relay nozzles, and wherein the control system charges more than one of the relay nozzles with compressed air as soon as a predictor value for the position of the weft thread tip which is formed with the help of the measurement values reaches the switch-on point of the relevant relay nozzles.

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21. (New) A system in accordance with claim 19, wherein the switch-on point of a group of air nozzles which are charged with compressed air at the same time corresponds to the position of the first air nozzle of the group.

22. (New) A system in accordance with claim 19, wherein the predictor value for the position of the weft thread tip contains a safety value or factor which depends on at least one of the resolution of the measuring apparatus, the switch-on time for the pressure build up in the region of the relevant air nozzle and the speed of the weft thread tip.

23. (New) A system in accordance with claim 19, wherein the predictor value for at least one of the position of the weft thread tip and the speed of the weft thread tip are formed as a result of the measurement values which are determined for the current weft thread.

24. (New) A system in accordance with claim 19, wherein switch off points are associated with the air nozzles, wherein the control system switches off one or more of the air nozzles which are charged with compressed air as soon as the predictor value for the position of the weft thread tip which is formed as a result of the measurement values reaches the switch off point of the relevant air nozzle or air nozzles respectively, wherein the switch off point has a predetermined distance from the switch on point of the relevant air nozzle or air nozzles respectively, and wherein the switch off point corresponds to the position of a subsequent air nozzle in the shed.

25. (New) A system in accordance with claim 19, wherein the air nozzles include at least one main nozzle, and at least one tandem nozzle, and one or more relay nozzles, and wherein it is possible to couple the switch off points of the main nozzle and/or tandem nozzle to the switch off point of a predetermined relay nozzle.

26. (New) A system in accordance with claim 19, wherein the thread store is formed as a drum store onto which the weft thread can be wound, and wherein the measuring apparatus is arranged at the thread store and includes at least one sensor in order to be

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able to measure the draw off of at least one of windings and partial windings from the drum store.

27. (New) A system in accordance with claim 19, wherein at least one of at least one additional sensor is provided in the path of travel of the weft thread in order to be able to measure the position of the weft thread tip and a weft thread monitor is provided on the weft thread arrival side of the shed.

28. (New) A system in accordance with claim 19, wherein the system additionally includes a thread brake in order to be able to brake the weft thread towards the end of the weft insertion when the weft thread tip approaches the weft thread arrival side of the shed.

29. (New) A system in accordance with claim 27, wherein the control system additionally includes a regulation device which is connected to at least one of the sensors, the sensor in the path of travel of the weft thread and the weft thread monitor in order to be able to determine, from the measurement values of at least one of the sensors and the weft thread monitor, the time required for the insertion of the weft thread and to be able to compare it with a predetermined desired insertion time, and in order to be able to regulate at least one of the pressure, the blowing time and the flow through the air nozzles using the difference between the time required for the insertion of the weft thread and the desired insertion time.